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Andrzej Krol

Barjor Gimi

Editors

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Changqing Li, University of California, Merced (United States)
Armando Manduca, Mayo Clinic College of Medicine (United States)
Robert C. Molthen, GE Healthcare (United States) and Marquette
University (United States) and Medical College of Wisconsin
(United States)
Nicholas J. Tustison, University of Virginia (United States)
John B. Weaver, Dartmouth Hitchcock Medical Center (United States)
Axel Wismüller, University of Rochester Medical Center (United States)
Baohong Yuan, The University of Texas at Arlington (United States)

Session Chairs

- 1 Optical
Baohong Yuan, The University of Texas at Arlington (United States)
- 2 Pulmonary
Andrzej Krol, SUNY Upstate Medical University (United States)
Nicholas J. Tustison, University of Virginia (United States)
- 3 Keynote
Andrzej Krol, SUNY Upstate Medical University (United States)
Barjor Gimi, Dartmouth Hitchcock Medical Center (United States)
- 4 Bone, Skeletal Imaging, and Biomechanics
Axel Wismüller, University of Rochester Medical Center (United States)
Andrzej Krol, SUNY Upstate Medical University (United States)

- 5 Fluid and Cardiovascular
Andrzej Krol, SUNY Upstate Medical University (United States)
- 6 Neurological Imaging I
Axel Wismüller, University of Rochester Medical Center (United States)
- 7 Innovations in Image Processing I
Armando Manduca, Mayo Clinic (United States)
Vikram D. Kodibagkar, Arizona State University (United States)
- 8 Machine Learning
Axel Wismüller, University of Rochester Medical Center (United States)
- 9 Novel Imaging Methods
Andrzej Krol, SUNY Upstate Medical University (United States)
Vikram D. Kodibagkar, Arizona State University (United States)
- 10 Neurological Imaging II
Axel Wismüller, University of Rochester Medical Center (United States)
Andrzej Krol, SUNY Upstate Medical University (United States)
- 11 Innovations in Image Processing II
Armando Manduca, Mayo Clinic (United States)

Introduction

The 2017 SPIE Biomedical Applications in Molecular, Structural, and Functional Imaging Conference was held on 12-14 February 2017 at the Renaissance Orlando at SeaWorld, Orlando, Florida, United States. We maintained the high participation we saw last year, both in the number of abstracts submitted and in the conference attendees as well. Chairs Barjor Gimi and Andrzej Krol welcomed Professor Bruce Rosen, Harvard Medical School, (United States) who delivered an outstanding, insightful keynote address. The presentation provided in-depth review on recent advances in neuroimaging encompassing modern functional MRI (fMRI), ultra-high resolution MRI, positron emission tomography (PET), and other methods that are applied as individual techniques or as multimodal hybrid approaches and are elucidating the connections between human the brain and behavior.

The diverse sessions included Keynote, Bone, Skeletal Imaging and Biomechanics, Fluid and Cardiovascular, Innovations in Image Processing, Machine Learning, Neurological Imaging Methods, Optical, and Pulmonary.

We are grateful to the session chairs: Vikram Kodibagkar, Armando Manduca, Axel Wismüller, and Baohong Yuan.

Robert Darnall, Geisel School of Medicine, Dartmouth Hitchcock Medical Ctr. (United States) was awarded the conference fee waiver for an outstanding paper entitled "1H magnetic resonance spectroscopy metabolite profiles of neonatal rat hippocampus and brainstem regions following early postnatal exposure to intermittent hypoxia."

The poster session comprised vibrant discussions. A panel of judges selected "*Anatomic optical coherence tomography for dynamic imaging of the upper airway*" by Ruofei Bu et al., The Univ. of North Carolina at Chapel Hill (United States) for the Cum Laude award. The following posters were selected as Honorable Mentions: "Computerized method to compensate a breathing body motion in dynamic chest radiographs" by Hirokai Matsuda et al., Kanazawa Univ. (Japan), and "Undersampling strategies for compressed sensing accelerated magnetic resonance spectroscopic imaging" by Rohini Vidya Shankar et al., Arizona State Univ. (United States).

**Barjor Gimi
Andrzej Krol**

2017 Medical Imaging Award Recipients

Robert F. Wagner Best Student Paper Award

Robert F. Wagner was an active scientist in the SPIE Medical Imaging meeting, starting with the first meeting in 1972 and continuing throughout his career. He ensured that the BRH, and subsequently the CDRH, was a sponsor for the early and subsequent Medical Imaging meetings, helping to launch and ensure the historical success of the meeting. The Robert F. Wagner All-Conference Best Student Paper Award (established 2014) is acknowledgment of his many important contributions to the Medical Imaging meeting and his many important advances to the field of medical imaging.



This award is co-sponsored by:



The Medical Image Perception Society

SPIE.

2017 Recipients:

First Place: **Direct measurement of Lubberts effect in CsI:Tl scintillators using single x-ray photon imaging** (10132-8)

A. Howansky, A. R. Lubinsky, Stony Brook Univ. (United States); S. K. Ghose, Brookhaven National Lab. (United States); K. Suzuki, Hamamatsu Photonics K.K. (Japan); W. Zhao, Stony Brook Univ. (United States)

Second Place: **Evaluation of a high-resolution patient-specific model of the electrically stimulated cochlea** (10135-21)

Ahmet Cakir, Vanderbilt Univ. (United States); Robert T. Dwyer, Vanderbilt Univ. Medical Ctr. (United States); Jack H. Noble, Vanderbilt Univ. (United States)

